## CLAIMS

1. The volume measuring device measures the separate gaseous and non-gaseous volumes of a di-phasic mixture contained within a vessel.

2. The device referred to in claim 1 uses a technique derived from Boyle's Law to determine the volume of the gaseous fraction within the vessel but significantly does not require knowledge of absolute pressure or temperature.

3. The device referred to in claim 1 is a solenoid based piston type device.

4. The device referred to in claim 1 is attached to a vessel containing a di-phasic mixture, the volumes of which need to be measured.

5. The device referred to in claim 1 changes the volume of the gaseous fraction of the mixture within the vessel referred to in claim 1 and claim 4.

6. The change in gaseous volume referred to in claim 5 is carried out over a very short period of time so as to avoid leakage out of the containing vessel referred to in claim 1.

7. The device referred to in claim 1 continually measures the gaseous volume change referred to in claim 5, along with corresponding electrical and time measurements.

8. The device referred to in claim 1 applies specific algorithms to the measurements referred to in claim 7 in order to determine the volume of the gaseous fraction of material contained within the vessel.

9. The device referred to in claim 1 determines the volume of the non-gaseous material by subtracting the volume of the gaseous material from the known volume of the vessel referred to in claim 1.